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RE-SEALABLE BAG

The subject matter of the invention is a re-sealable bag according to the preamble of claim 1.

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Re-sealable bags, especially for bulk goods, such as rice and the like, are known in many configurations. They usually include a closure made from two complementary profiled strips, which can be connected by pressing them together and which can be opened by pulling them apart or by means of a slide.

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From EP-0 843 636 B1 such a closure is known. Here, the two profiled strips are bonded to the still flat foil web, from which the bag is formed at a later time. The two foil strips forming the closure are connected to the foil web, such that the two free edges, i.e., the edges lying opposite the engaging edges, do not come into contact, but instead extend wing-like away from the engaging parts. In the area of the foil coming to lie directly underneath the overlapping edges of the closure, a perforation is formed, which enables a strip to be detached from the foil to permit access to the closure, which is lying behind and is arranged in the interior of the bag. The production of such a bag or the attachment of the closure can be realized with simple means before the bag is produced. However, on one hand, the handling of this known closure is impractical, because the access to the closure through the slot-like opening is very narrow after the removal of the perforated strip and, on the other hand, the resealing is also impractical, because pressure must be exerted on the closure from the rear side via the partially still present contents, in order to be able to reconnect the closure.

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One objective of the present invention is to create a re-sealable bag with a re-sealable closure, which is protected within the bag behind a tear-open strip before the initial opening and which is optimally accessible after the removal
5 of the strip providing protection before the initial opening and thus can be opened and reclosed easily.

This objective is achieved by a re-sealable bag with the features of claim 1. Advantageous configurations of the bag are described in the dependent
10 claims.

Through the possibility created by the invention for opening and closing the closure by folding out the bag from the inside, it becomes possible to provide access to the bag as if the closure were attached to the upper end of the bag.
15 The reclosing can be performed by guiding the closure between two fingers pressed against each other, as is possible with a bag to be opened at the top. Before opening, the closure lies in the interior of the bag protected and away from contact before the initial opening. Any attempted manipulation is immediately visible. The upper end of the bag, through which the bag has
20 been filled, can be sealed with a seam using very simple means, e.g., bonding or stitching. Before the initial opening, the contents do not come into contact with the closure, because the closure is completely separated from the contents by a cover sheet. Only after the initial opening, i.e., the cutting of the cover sheet, is it possible to access the contents from the outside. When
25 emptying the bag, contents coming into contact with the closure can be removed easily and thus the closure can be kept clean.

The invention is explained in more detail with reference to illustrated embodiments. Shown are
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Figure 1 a perspective view of a bag, cut-away on one side, completely unopened,

5 Figure 2 a schematic cross section through the front bag wall in the area of the closure in a second configuration of the invention,

Figure 3 a schematic cross section through the front bag wall in the area of the closure, completely unopened,

10 Figure 4 a schematic cross section through the front bag wall in the area of the closure, with the safety band torn away,

Figure 5 a schematic cross section through the front bag wall in the area of the closure, with the closure pulled out from the bag,

15 Figure 6 a schematic cross section through the front bag wall in the area of the closure, with the closure opened,

20 Figure 7 a schematic cross section through the front bag wall in the area of the closure, with the closure cut,

Figure 8 a schematic cross section through the front bag wall in the area of the closure, with the closure reclosed.

25 On the only partially illustrated bag 1, the upper region of the front wall 3 and the rear wall 5 are visible. The two walls 3, 5 are connected to each other undetachably by a bond and/or thread seam 7, in short, seam 7, at the top after the bag is filled. The base of the bag 1 is not visible. Two perforation lines 9, which are connected to each other at their ends and which are formed
30 by notches or laser-created holes, are visible in the front wall 3. The perfora-

tion lines 9 define a tear-away or safety strip 11, which can be torn away by hand from the front wall 3 composed of a film or a different coated material. Behind the safety strips 11, a closure 13 and a cover sheet 15 are attached to the inside of the front wall 3 by sealing seams 17a and 17b. The edges of the inner and the outer closure parts (13a, 13b) can be connected to the front wall (3) by a common seam or by two separate bonding or sealing seams 17b.

The lower edge of the cover sheet 15 is attached at the inner closure part 13a by a sealing seam 17c. The upper edge and the side edges of the cover sheet 15 are fixed undetachably at the inside of the front wall 3 by a bonding or sealing seam. The outer closure part 13b and the inner closure part 13a can be connected to each other detachably by a tear-away or grooved closure 19, also called a "cut-n-seal" closure. Gripping strips 21 for better handling can be formed on the inner and one of the outer closure parts (13a, 13b) of the tear-away or grooved closure 19.

For an unopened bag 1, the grooved closure 19 lies protected between the cover sheet 15 and the front wall 3, so that no contents can reach the area of the grooved closure 19.

Obviously, the closure arrangement could also be arranged on the rear wall 5.

For better clarity, Figure 7 shows only the front wall 3 of the opened bag 1 after removing the safety strip 11 and opening the grooved closure 19, i.e., pulling apart the two parts 19a and 19b. In addition, the inner closure part 13a is cut along a cutting line 23 with a blade 25 or, if provided, along a perforation cutting line 23. Alternatively, the closure part 13a which lies on the inside could be connected directly to the front bag wall 3 by a peelable connection 29 (Fig. 2). This configuration would enable the opening B to be exposed without the aid of a blade.

The opening process is explained step-by-step with reference to the schematic views in Figures 3 to 8. In Figure 3, which corresponds to Figure 1, the closure 13 lies behind the safety strip 11. The latter is completely or partially pulled away in Figure 4. The pulling away can be realized by hand without tools. Here, with a fingernail, the perforation 9 is opened and thus the safety strip 11 is gripped. Now the closure 13 is freely accessible in or behind the opening 27, which is created in the front wall 3 after pulling away the safety strip 11. The closure 13 can be closed at this time, i.e., the grooved closure parts 19a and 19b can be joined together; it is also possible to arrange the closure 13 unclosed between the safety strip 11 and the cover sheet 15 before the initial opening. After pulling away the safety strip 11, the closure 13 can be pulled out from the opening 27 (compare Figure 5). If the grooved closure parts 19a and 19b have not yet been pulled apart (as shown in Figure 5), these can be pulled apart in a known way at the gripping strips 21 (Figure 6). With the blade 25, a cut can be created from the outside at the position A, i.e., between the two closure parts 13a and 13b, or, if a perforation line 23 is present in this position, this line can be opened with a finger or a different pointed object (state according to Figure 7). In this way, a removal opening B, which is located behind the opening 27, is created. The removal opening B can be reclosed by pressing together the two grooved closure parts 19a and 19b (state as shown in Figure 8). The reclosing is performed outside of the front wall 3. If desired, the closure 13 can now be pressed back into the interior of the bag 1 (not shown). As an alternative to a grooved closure without a slide, such a closure with a slide (not shown) can also be used.

The production of bags 1 with the closure 13 according to the invention is simple, because the closure 13 and the cover sheet 15 can be attached by long-known sealing processes onto the still band-shaped films, which form the front wall 3 and the rear wall 5 and if necessary the base.

In another configuration of the invention according to Figure 2, the cover sheet 15 can be attached directly or formed/extruded directly on the grooved closure part 19a.

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The two closure parts 13a and 13b can also be connected to each other along their free edges or can be composed from a single drawn part.

Furthermore, the cover sheet 15 can be produced integrally with the closure
10 part 13a instead of with an attachment to the closure part 13a by the sealing seam 17c.